

# SOUTHERN CALIFORNIA GACC

## 2003 FIRE SEASON OUTLOOK

### JUNE THROUGH SEPTEMBER

#### UPDATED JUNE 2, 2003

### Weather and Climate:

Although the 2002-2003 rainfall season does not officially end until June 30<sup>th</sup>, May represents the last month of the season in terms of receiving any significant precipitation. So, essentially the rainfall season is over. This winter saw near to above normal precipitation over most of the area after three to four consecutive years of drought. Periods of significant precipitation even occurred over many sections of the deserts. Except for January, precipitation was fairly uniform throughout the winter and spring months. Figure 1 shows the departure from normal for precipitation since October 1, 2002.

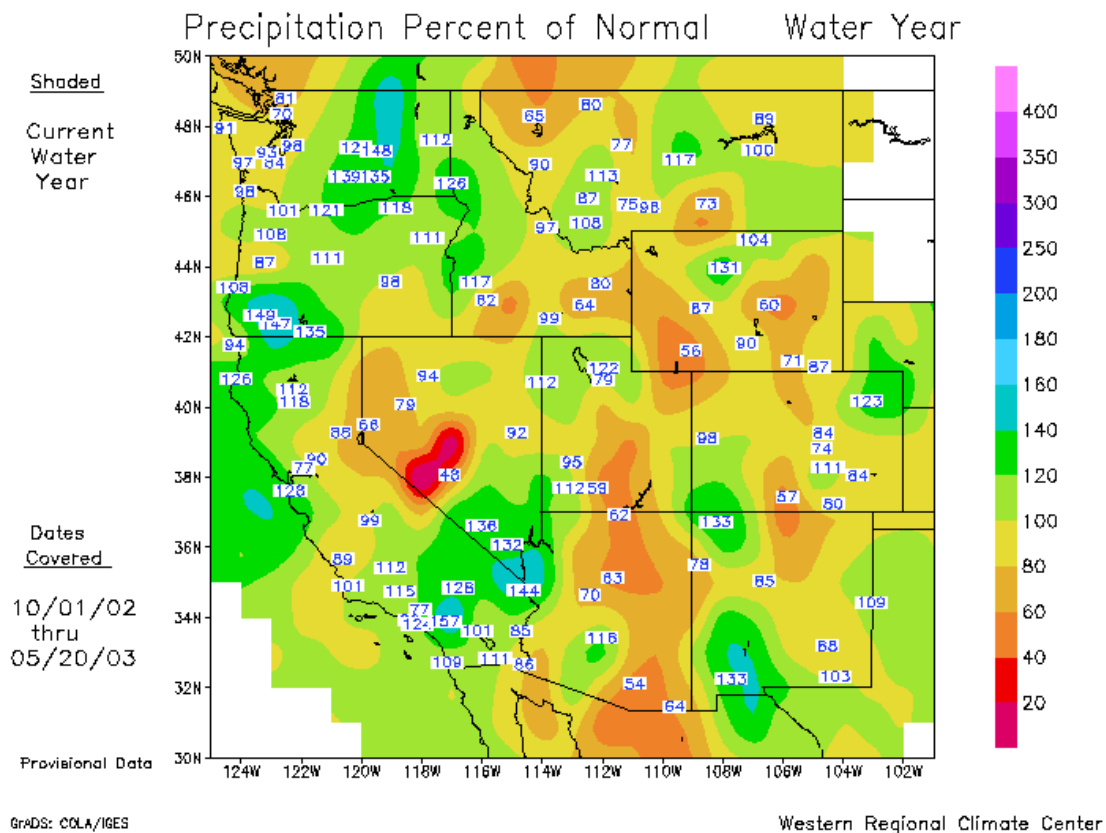


Fig. 1

It is also significant that temperatures this spring have been averaging below to well below normal. Combinations of wet and cool conditions have led to continued growth of fine fuels and have prolonged the curing period in many areas. A good example of how temperatures have been reacting through the middle of May is shown in figure 2. Summer-like temperatures finally arrived over the last two weeks of May.

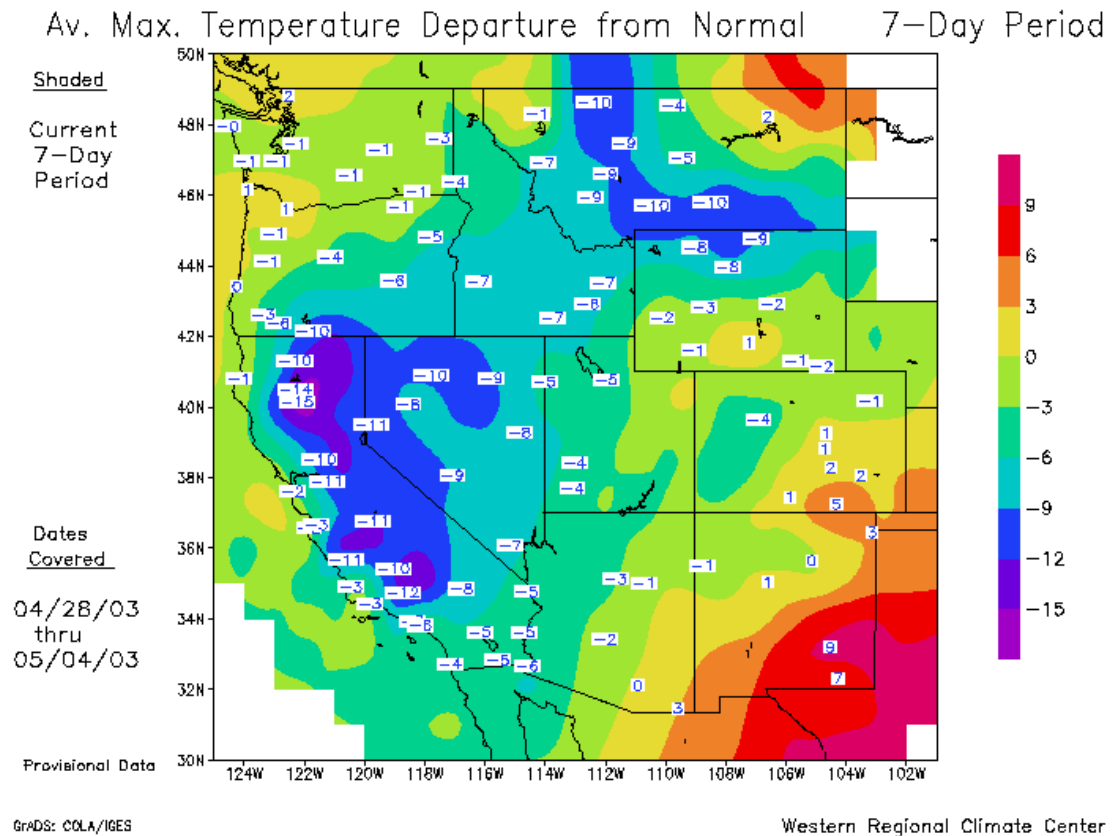


Fig. 2

The Palmer Drought Index has shown various degrees of drought conditions over all of the Geographic Area until recently. While it is indicating recent improvements in drought conditions for the area, the long-term drought effects shown in the Standardized Precipitation Index Percent of Average Precipitation over the last 48-month period (figure 3) have not yet been completely mitigated.

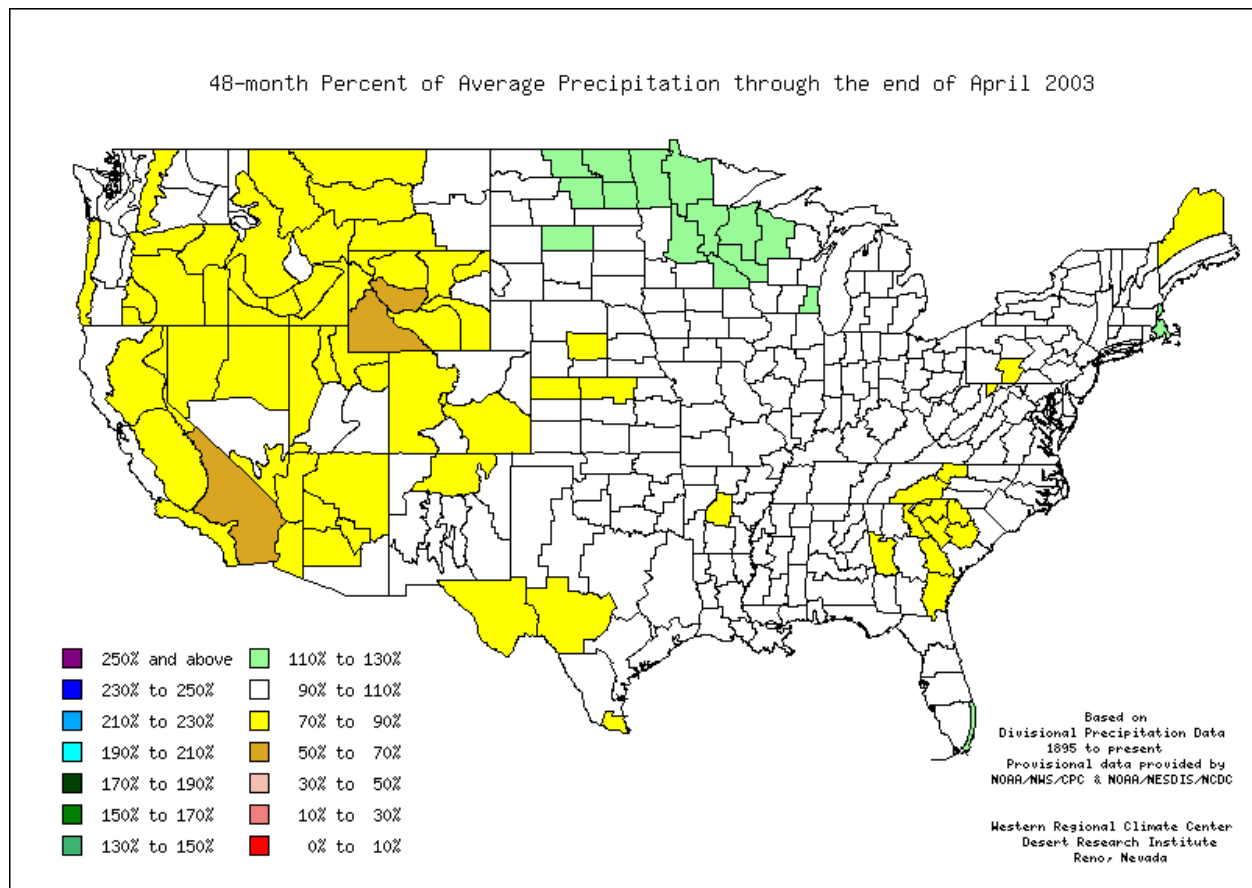


Fig. 3

## Weather Outlook:

The last two weeks of May were exceptionally warm. We continue to expect, that at least through the middle of June, we will see some significant periods of onshore flow that will result in cooler temperatures and higher humidity for all areas. The coastal areas will remain generally cool and moist through June, and probably through most of the summer, as a little stronger than normal surface onshore flow condition is expected. A dry summer is expected over the entire area, which is typical for our climate. There will be a few periods of thunderstorm activity over the mountains and deserts in July and August, but there are no indications at this time of above normal influxes of subtropical moisture. All the latest models are predicting a warmer than normal summer. The models have been consistent in this regard for many months now. Shown in figures 4 and 5 are the expected temperature and precipitation anomalies for June through August.

TEMPERATURE

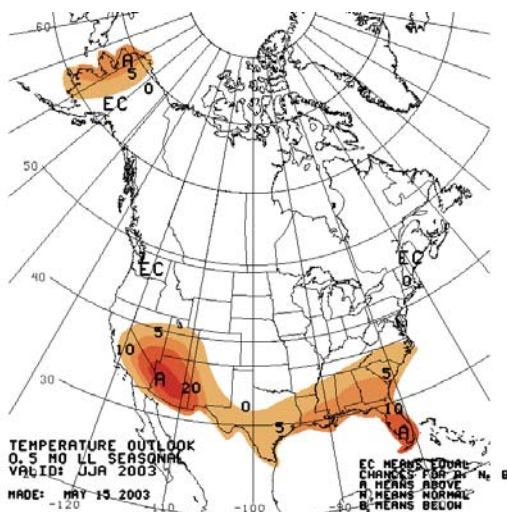


Fig.4

PRECIPITATION

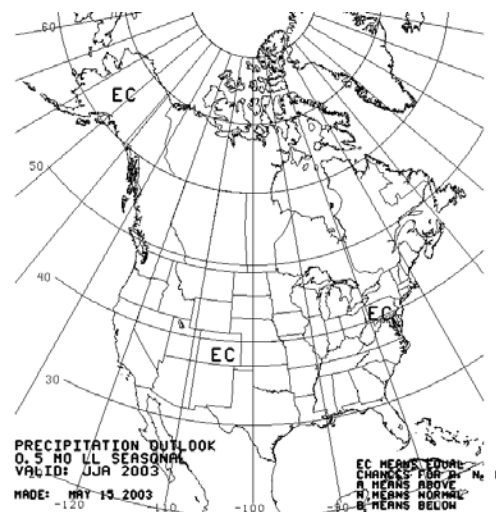


Fig. 5

## Fuel Conditions:

While 1000-hour dead fuel moisture levels on most severity stations have generally been at below normal levels through the spring, most stations have returned to around normal levels. Thousand-hour fuel moisture levels are, however, ranging around the recorded lows at stations on the Inyo and Cleveland National Forests. A return to normal winter and spring precipitation after several drought years has resulted in grass crops that have not been seen for a number of years. The presence of grasses increases the volume and continuity of the fine fuels present, especially in desert areas that have had minimal fuels available for the last several years. The grass crop was almost completely absent during last year's severe drought conditions, but adds significantly to fire potential this year by increasing the availability of a fine fuel bed for new ignitions.

The five southernmost Forests in the Geographic Area have all been experiencing an increase in timber and brush mortality over the last year due in part to the extended drought conditions described above. The Los Padres, Angeles, and Cleveland National Forests have low to moderate levels of timber and brush mortality, while Sequoia and San Bernardino National Forests have a range of mortality levels with high mortality in several areas. A significant portion of the affected areas are in communities in the urban interface in and around the three southern forests.

### **Fire Danger:**

Fire danger conditions throughout late winter and spring have been moderate, due to the volume of green grass present throughout much of the Geographic Area. The presence of grasses this year is a significant change from last year, and represents a larger grass crop than has been seen in a number of years, especially in desert areas. These grasses are already curing at the lower elevations, and are expected to cure at higher elevations by mid- to late June. Once grasses have cured, fire danger conditions are likely to increase severely, combining the dry grass and high ignition potential in grassy areas with a number of other factors that are likely to result from continued drying and forecast above-normal temperatures. These conditions include above-normal Energy Release Component Levels (ERCs) that could be at near or above record high levels, and 1000-hour fuel moisture levels that could approach or exceed record lows. The addition of the brush and timber mortality on the four southern forests into the fire danger picture essentially adds vertical dead fuels into the equation. These conditions create ladder fuels in many areas, from dead grass, brush, and pine trees, although in some areas the dead pine trees are beginning to drop the needles, somewhat alleviating vertical fuel continuity. Many of the areas with affected brush and timber mortality in and around the three southern Forests are in urban interface areas in communities with significant populations, and therefore have a higher potential for human-caused fire occurrence. Many of the communities in the affected areas are located in naturally windy terrain as well, increasing the potential for fire spread. The combination of these conditions is likely to cause extreme fire behavior even under moderate fire weather/fire danger conditions.

In short, fire danger conditions are likely to remain mild in areas affected by the onshore flow through mid- to late June, but increase to well above normal as temperatures increase to above normal levels and grasses dry out. While last year's fire danger was dominated by extreme drought, this year's season may not see such incredibly dry levels, but instead a combination of factors including increased availability of fine fuels, ignition potential and increased vertical dead fuel availability. While a number of large fires occurred last year due to significant drought conditions and resulting extreme fire behavior, initial attack activity remained moderate throughout the season. Conditions this year are likely to create higher levels of initial attack activity than last year, with potential for extreme fire behavior and large fire growth from late June through at least September.

**Conclusion:**

Based on the above information, figure 6 below shows the outlook for fire activity potential for the months of June through September.

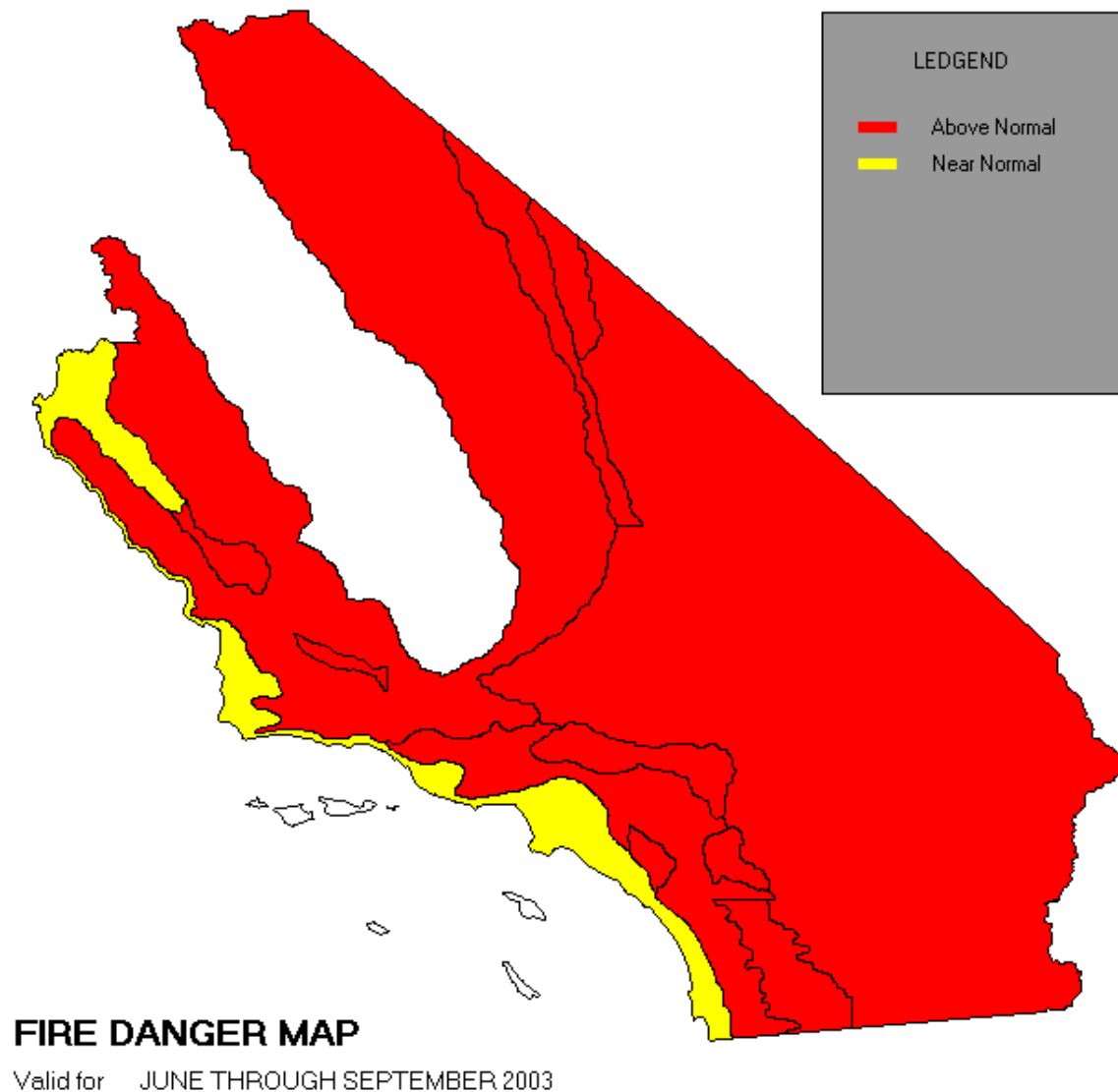


Fig. 6

The 2003 fire season is likely to see above-normal potential for fire activity throughout most of the Geographic Area. Conditions this year are likely to create higher levels of initial attack activity than last year, with potential for extreme fire behavior and large fire growth from late June through at least September. Stronger than normal onshore flow of marine air will likely maintain below normal fire potential in the coastal areas through much of the summer period.

This flow pattern will produce stronger than normal afternoon winds over much of the desert areas, resulting in an increase in fire potential during the early summer period. Above normal fire potential is expected throughout the Geographic Area due in part to a high occurrence of fine fuels, increasing the potential for ignition and fire spread. Significant brush and timber dieback in and around the five southernmost Forests creates additional potential for extreme fire behavior through increased continuity of vertical dead fuels and the increased availability of dead fuels for consumption. The presence of urban interface and significant populations around several areas of timber and brush mortality, combined with increased fine fuel availability, adds to the potential for fire ignition and the danger of extreme fire behavior in those communities. Above normal fire potential is also likely throughout the deserts and valley areas due primarily to high temperatures and the increased availability of fine fuels this season.

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June 2, 2003